

## REMARKS

These amendments and remarks are in response to the Office Action dated October 4, 2004. Claims 1-38 are pending in the application.

In the Office Action, the Examiner rejected claims 1-38 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Further claims 1-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,285,679 B1 (“Dally”).

Each of the rejections from the Office Action of October 4, 2004 is discussed below in connection with the various claims. Further, with this response, Claims 1, 13, 32 and 37 have been amended to clarify the claims and have not been amended for the purpose of patentability. No new matter has been added. Reconsideration of the application is respectfully requested in light of the following amendments and remarks.

### **I. REJECTIONS UNDER 35 U.S.C. § 112**

#### **A. Claim 1, 20, 37, and 38**

Claims 1, 20, 37 and 38 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically the Examiner contends that there is a lack of specifications on what is being filtered, how the filtering is performed, or what incentives are offered. One of skill in the art would appreciate that the ordinary dictionary definition of the term “selective” is, “1: of, relating to, or characterized by selection : selecting or tending to select 2: highly specific in activity or effect.” Merriam-Webster’s Collegiate Dictionary 1056 (10<sup>th</sup> ed. 2002). Further, the dictionary defines “intercepts” as “to stop, seize, or interrupt in progress or course or before arrival.” Merriam-Webster’s Collegiate Dictionary 608 (10<sup>th</sup> ed. 2002). Applicants submit that the Specification is consistent with the above definitions and adequately describes what is being filtered, how the filtering is performed, and what incentives are offered. For example, see the Specification, paras. 191 – 194, and elsewhere in the Specification. Therefore, Applicants request that the Examiner withdraw this rejection of these claims.

## **B. Claims 2-19 and 21-36**

Dependent claims 2-19 and 21-36 were also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependent claims 2-19 and 21-36 should be allowed for the reasons set out above for the independent claims. Applicants therefore request that the Examiner withdraw this rejection of these claims.

## **II. REJECTIONS UNDER 35 U.S.C. § 103(a)**

### **A. Claim 1, 20, 37 and 38**

Claims 1, 20, 37 and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dally. Applicants submit that claims 1, 20, 37 and 38 should be allowed because Dally in combination with the assertions of the Examiner as to what Dally implies fails to disclose all of the elements of these claims.

Amended claim 1 is directed to an architecture for intercepting and processing packets transmitted from a source to a destination over a network. The architecture comprises a packet interceptor coupled with the network and operative to selectively intercept the packets prior to receipt by the destination. The architecture also includes at least one stateless processor coupled with the packet interceptor and operative to perform stateless processing tasks on said intercepted packets. The at least one stateless processor includes at least two primary packet processors coupled in parallel. The processing of the intercepted packets being distributed among the at least two stateless packet processors. The architecture also includes at least one secondary processor coupled with at least one stateless processor and operative to perform stateful processing tasks on the intercepted packets. The at least one secondary processor includes at least two secondary packet processors coupled in series with each other. Each of the at least two secondary packet processors operative to perform a portion of the stateful processing tasks on the intercepted packets, a last one in the series of the at least two secondary packet processors being coupled with the network and operative to selectively release the intercepted packet back to said network.

Claim 20 is directed to a method of intercepting and processing packets transmitted from a source to a destination over a network. The method comprises intercepting,

selectively, the packets prior to receipt by the destination. Distributing the intercepted packets to at least two primary packet processors each operative to perform stateless processing tasks on the intercepted packets. Performing the stateless processing task in parallel by said at least two stateless packet processors. Receiving the intercepted packets from the at least two primary packet processors by a first secondary packet processor operative to perform a first stateful packet processing task on the intercepted packets. Receiving the intercepted packets from the first secondary packet processor by a second secondary packet processor operative to perform a second stateful processing task on the intercepted packets. And releasing, selectively, the intercepted packets.

Amended claim 37 is directed to an apparatus for intercepting and processing packets transmitted from a source to a destination over a network. The apparatus comprises a means for selectively intercepting said packets prior to receipt by said destination. The apparatus further comprises a means for performing stateless processing tasks on said intercepted packets, including a parallel processing means for distributing and processing the intercepted packets in parallel coupled with the stateless processing means. The apparatus further comprises a means for performing stateful processing tasks on the intercepted packets including a serial processing means operative to distribute said stateful processing tasks on said intercepted packets and selectively release the intercepted packet back to the network.

Claim 38 is directed to an apparatus for intercepting and processing packets transmitted from a source to a destination over a network. The apparatus comprises a packet interceptor operative to intercept packets from the network. The apparatus further comprises a packet processor coupled with the packet interceptor and operative to process the intercepted packets. Wherein the packet interceptor is further operative to filter the packets to determine which of the packets to intercept and the packet processor is further operative to monitor the intercepted packets for pre-defined conditions and at least one of delete, modify and log packets which meet the pre-defined conditions.

Dally discloses a design for an Internet Switch Router. Dally borrows from multi-processor technology by having each router itself configured as either a direct or indirect network. The design receives and outputs data packets. *See Dally, Col. 2 lines 30-42.* Dally also discloses an incoming link and an output link. *See Dally, Col. 7 lines 1-19.* Dally further discloses the organization of each router: packets arrive over the input link, are

converted to another format, have information extracted from their headers, and then are passed to the forwarding engine and stored in the packet memory. *See Dally, Col. 7 lines 1-18.* Once the forwarding engine performs a lookup of the route of links through intermediate fabric routers, the packet is presented to the fabric router. *See Dally, Col 7 lines 23-27.* Bit shifting is done when the packet arrives at the fabric node. *See Dally, Col 7, lines 40-42.* The fabric node then assigns the packet to a non-busy virtual channel based on a state table which is updated with information from each packet. *See Dally, Col. 10 line 28 – Col. 13 line 11.* From there the packet is delivered through the packet buffer through the line interface circuit to the output link.

Dally merely discloses the logical structure of a network router in which packets arrive over an incoming link, and a line interface circuit converts the optical input to electrical signals and extracts the packets and their headers from the incoming stream. *See Dally Col 7, lines 1-18.* Dally does not disclose using any processors let alone a physical arrangement of processors as claimed.

The Examiner asserts that

... it is evident that processors are clearly required within Dally's design to perform the disclosed processes. In addition, no limitation is placed upon the number of processors to be used per process or the placement of the processor. So, the number of processors used and their placement as claimed are clearly within the scope of Daily's design. October 4, 2004 Office Action, page 4.

Applicant submits, however, that Dally neither discloses nor suggests how many processors are used or how they would be arranged. In particular, assuming, without admitting, that processors are required within Dally's design to perform the processes disclosed in Dally, there is still no disclosure concerning the number, arrangement, and function of processors. In fact, Dally teaches away from the claimed arrangement. For example, figure 9 in Dally illustrates a separate input link for each input buffer. Dally also discloses, "more than one link may be provided to and from the line interface." *See Dally, Col. 8 Lines 25-36.* Dally expands this statement by stating, "[i]n an alternative embodiment two output links are provided from the fabric to the line interface bringing the total number of output links, and hence output registers, to eight . . . The second output link provides additional bandwidth to drain packets from the fabric network when a single node receives traffic simultaneously from many directions." *See Dally, Col. 8 Lines 25-36.* Since Dally

only discloses logical structure, the arrangement of processors can only be speculated. One arrangement of processors suggested by Figure 9 could be a single processor for the entire input buffer. Another arrangement could be one processor per input buffer. Both of these arrangements of processors teach away from the claimed invention because neither allows for intercepted packets from an input being distributed among at least two primary packet processors. Dally discloses that whichever packets come in over an input, are handled by a processor connected with that input. In other words, if two packets are received over a given input by the device disclosed in Dally, processing of the second packet will have to wait for the first packet to be processed. In contrast, Applicants claimed structure allows the second packet to be statelessly processed in parallel to the first packet.

In addition, Dally's disclosure that "various changes in form and details may be made therein without departing from the spirit and scope of the invention" without giving details as to what those changes could be, cannot render the claimed arrangement and functionality obvious. *See Dally, Col. 19, lines 16-25.* For the reasons stated above it would not have been obvious to one skilled in the art, during the time of invention, to implement the claimed processor arrangement or functionality with the logical structure disclosed by Dally.

Even if processors are required within Dally's design to perform the disclosed processes, it is not obvious that one skilled in the art would combine the claimed arrangement and functionality of the processors with Dally's design. The mere fact no limitation is placed upon the number of processors to be used per process or the placement of the processors in Dally does not provide motivation to arrange the processors as claimed in claims 1, 20 and 37.

Dally in combination with what the Examiner contends was obvious to one skilled in the art during the time of invention does not disclose all of the elements in claims 1, 20, 37 and 38. For all of the reasons stated above Applicants respectfully request the withdrawal of the rejection to Claims 1, 20, 37 and 38 under 35 U.S.C. § 103(a).

## B. Dependent Claims 2-19 and 21-36

Dependent claims 2-19 and 21-36 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Dally. Claims 2-19 are dependent on independent claim 1 and claims 21-36 are dependent on independent claim 20. As explained above, Dally in

combination with what was obvious to one skilled in the art during the time of invention does not disclose all of the elements of claim 1 or 20. Accordingly, Dally does not disclose all of the elements of claims 2-19 and 21-36. Therefore, Applicants respectfully request the withdrawal of the rejection to claims 2-19 and 21-36 under 35 U.S.C. § 103(a).

## CONCLUSION

In view of the foregoing remarks and amendments, Applicants submit that the pending claims and new claims are in condition for allowance. Reconsideration is therefore respectfully requested. If there are any questions concerning this response, the Examiner is asked to phone the undersigned attorney at (312)-321-4200.

Respectfully submitted,

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